

April 19, 1938.

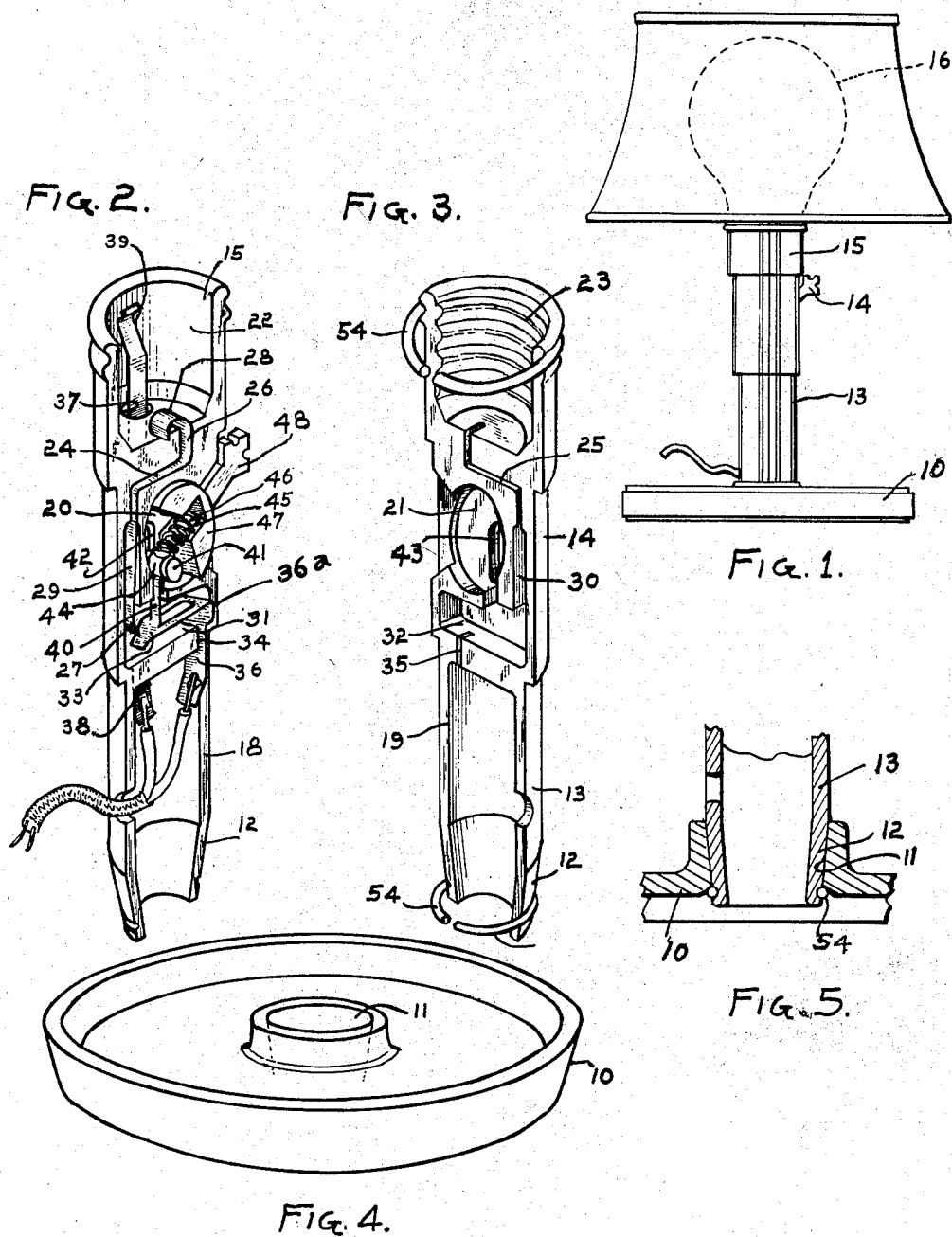
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2,114,826

ELECTRIC LAMP

Filed July 21, 1936

2 Sheets-Sheet 1



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FIG. 6.

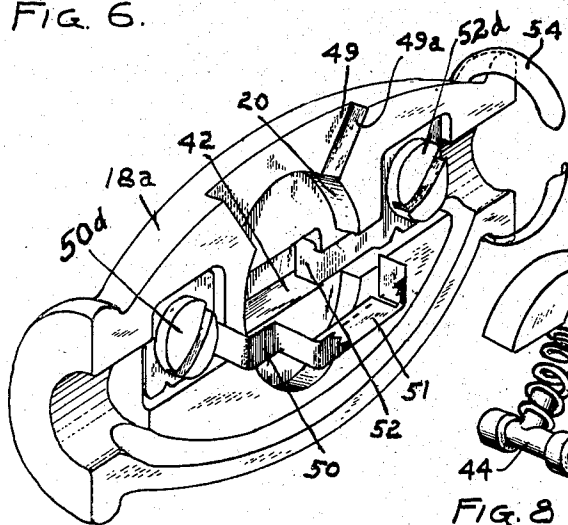


FIG. 7.

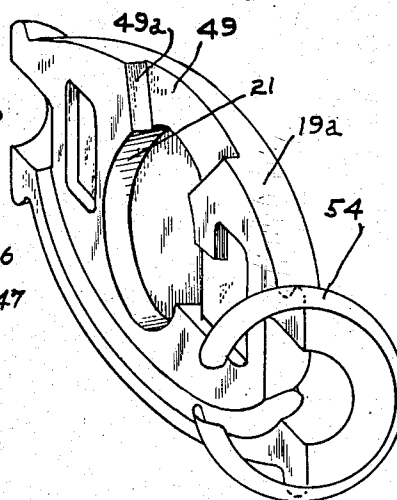


FIG. 8.

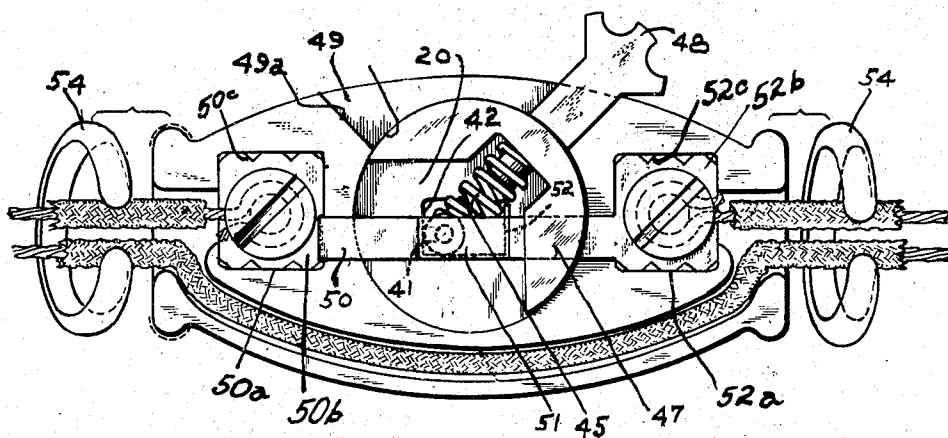


FIG. 9.

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2,114,826

ELECTRIC LAMP

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Application July 21, 1936, Serial No. 91,661

3 Claims. (Cl. 240—81)

My invention relates to electric lamps and it has for an object to provide apparatus of this character comprised by component parts which may be readily molded.

More particularly, I provide a lamp including a base having a socket to receive the lower end of a standard or body. The standard is made in complementary halves to expose, when separated, complementary chambers or recesses for the reception of unitary switch mechanism as well as associated conductors. The halves of the standard also have complementary portions of a lamp socket at their upper ends, and the halves are preferably held together by upper and lower spring rings, the lower ring also serving to hold the standard and base in assembled relation. A further object of my invention is to provide a lamp comprised by an assembly of these constituent features, whereby lamps may be very economically produced from moldable material and readily assembled and dismantled.

A further object of my invention is to provide a switch for conductors which shall be of unitary character, require no fastening devices, and which may be confined in operative relation merely by assembly of the standard or body parts.

These and other objects are effected by my invention, as will be apparent from the following description and claims taken in connection with the accompanying drawings, forming a part of this application, in which:

Fig. 1 is a side elevational view of the improved lamp;

Figs. 2 and 3 are isometric views of complementary portions of the standard;

Fig. 4 is an isometric view of the base;

Fig. 5 is a detail sectional view showing means for holding the parts of the standard together and for connecting the lower end of the standard to the base; and,

Figs. 6, 7, 8, and 9 are detail views of the switch mechanism.

In the drawings, there is shown a lamp comprising a base 10 having a socket 11 to receive the lower end 12 of the standard or body 13, the lower end of the standard and the socket being preferably tapered, as shown in Fig. 5.

The standard or body has a switch aggregate 14 accessible at the side, and, at its upper end, there is a socket 15 to receive the ordinary base of an electric bulb 16.

The standard, the base, the switch aggregate, and the conductors are so constructed and designed as to facilitate manufacture and assembly, the base, the standard, and, to a large extent,

the switch aggregate being comprised by molded units.

The standard or body 13 is comprised by complementary halves 18 and 19 formed, respectively, with cylindrical cavity portions 20 and 21 for the switch aggregate 14, with socket portions 22 and 23 for the bulb base, with channel portions 24 and 25 for a conductor 26 connecting a switch terminal 27 with a contact or terminal 28 in the socket 15, chamber portions 29 and 30 forming part of the channel portions 24 and 25 and communicating with chamber portions 31 and 32 for the movable contact 33 of the switch, the latter contact being confined in channel portions 34 and 35 for the conductor 36 forming a part of such movable contact. The standard or body half 18 is formed with a cored passage 37 for the conductor 38 terminating in a spring contact 39 in the socket half 23 for the bulb base, the conductor 38 preferably being so bent that it is held in place in the cored passage by friction due to the necessary deflection incident to assembly.

The movable contact 33 has an arm 40 engaged by the actuating bar 41 of the switch aggregate and whose ends are guided by longitudinal grooves 42 and 43 formed in the complementary standard halves. As shown, the bar has a boss 44 entering one end of the spring 45, the other end of the latter encompassing a boss 46 formed on the arcuate or pivot portion 47 of the lever 48, the parts 48, 47, 46, 45, and 44 and the contacts engaged and disengaged thereby comprising the switch aggregate 14.

Assuming that the standard halves have been produced with the various cavities, channels, chambers, and passages, the conductors 26, 36, and 38 and the switch parts 48, 47, 46, 45, and 44 are assembled in the standard half 18 and then the other half 19 is assembled with respect to the first half.

Referring again to the actuating bar 41 of the switch, when such bar is at the lower end of the guide grooves, the contacts are disengaged, and, when at the upper end, such contacts are engaged.

The spring 45 engages the pivot 46, fitting the complementary cylindrical socket portions 20 and 21, to one side of the axis thereof, the spring being assembled with a desired amount of initial tension so that it holds the pivot properly in the socket portions. Due to the guide grooves for the actuating bar and the eccentric connection of the spring to the pivot, as well as the relation of the guide grooves and the socket for the pivot, it will be apparent that the spring force will be a minimum

imum when the lever, the spring, and the bar assume a diagonal position with the bar either at the upper or lower ends of the guide grooves. If the lever is moved, the spring force is increased until it becomes effective to snap the bar quickly to the other end of its guide and to complete movement of the lever so that the parts come to rest in the other diagonal position. Thus, it will be seen that the guides and the eccentric connection of the spring to the pivot assure increase in the spring force during the first portion of the lever travel, but, as soon as the spring connection reaches a position normally opposite to the ends of the guide, further compression and deflection of the spring, due to movement of the lever, ceases and the spring force is effective to move the bar to the other end of the slot just as soon as the changing relative position of the spring gives a component of spring force acting along the guide and sufficient to overcome friction. In other words, there is provided a snap-over switch, which requires no fastening with respect to the complementary parts of the standard, location of the bar in the guide and the lever pivot in the cylindrical recesses with the spring properly connected to the bar and to the pivot and under initial tension assuring of the parts being maintained in operative relation.

The lamp bulb socket is comprised by the semi-cylindrical socket halves, as already pointed out. To facilitate manufacture and to avoid alignment difficulties, only one socket half, for example, the half 23 is internally threaded; and, as the composition from which the standard or body parts are made is preferably of insulating character, contact means other than the usual thread serving this purpose must be provided. Accordingly, the deformed contact end 39 of the conductor 38 serves, not only to hold the conductor in the cored passage, but also to secure good electrical contact with the lamp bulb base, it exerting sufficient lateral pressure on the latter to keep the threads thereof engaged with the molded threads and to permit of the bulb base being screwed in and out of the socket in the usual way.

From the foregoing, it will be seen that, due to the structure of the body halves 18 and 19, the two conductors and the switch are held in permanent operative position without the use of special fastening devices, the design of all parts at the same time being such as may be readily molded and fabricated. One conductor extends through a cored passage and it is deformed so as to bind in place. The conductor is formed in first and second parts, with portions thereof constructed and arranged to provide fixed and movable contacts; and the parts have tortious portions fitting tortious channel portions and which serve to hold them in place with respect to the body 13. Referring more particularly to the tortious anchorage of the two conductor parts, the conductor part 26 is retained by complementary channels 24 and 25 having offset vertical portions connected by a transverse portion. The tortious connection for the conductor part 36 is comprised by the arrangement of the complementary recesses 34 and 35 and chambers 31 and 32, the conductor 36 being bent backwardly at 36a to limit downward movement (Fig. 2).

Figs. 6, 7, 8, and 9 show the switch in greater detail. In these views, the complementary body parts 18a and 19a are provided with complementary cylindrical recesses 20 and 21 forming a socket for the lever pivot 47 and the recess has a groove 42 for one end of the bar 41, the other

end of the latter fitting a contact 50 which has a portion 51 serving not only as a contact but also complementally with the groove 42 forming a part of the guide for the bar. A second contact 52 is arranged at one end of the guide groove 42. In the latter view, the bar 41 functions as a movable contact connecting the contacts 51 and 52 when at one end of the guide and disconnecting such contacts in all other positions.

As may be seen from Figs. 8 and 9, the movable switch aggregate is held in place by means of the guide for the contact bar 41 and the cylindrical socket for the pivot, the spring 45 engaging over bosses 44 and 46 to provide a spring link or connection between the pivot and the bar, the spring being placed under initial compression incident to assembly of the movable aggregate with respect to the body part 18a, after which the body part 19a may be brought into complementary relation with respect to the first part, the socket portion 21 receiving a portion of the pivot.

The lever 48 extends outwardly of the pivot and fits in complementary portions 49 of a slot opening into the pivot socket, the portions 49 having end abutment surfaces 49a to limit motion of the lever to that required for proper operation of the movable aggregation.

To facilitate assembly and holding of the contact elements 50 and 52 in place with respect to the molded body half 18a, the latter is preferably provided with non-circular cavities 50a and 52a and the contact strips 50 and 52 have terminal portions 50b and 52b conforming to the cavities, the side edges of the terminal portions being serrated as indicated at 50c and 52c. Prior to assembly, the terminal portions 50b and 52b are dished or convexed so that pressure exerted thereon may cause spreading of the terminal portions with the serrations thereof biting into the body. Pressure for this purpose may be exerted on the terminal portions by any suitable means, for example, by the screws or binding posts 50d and 52d.

As before, the body parts when assembled, with the movable switch aggregate in place, may be connected by spring rings 54. Furthermore, the pivot serves to seal the lever slot.

From the foregoing, it will be apparent that I have provided an electrical device such as a lamp comprising a multiplicity of parts capable of ready assembly and which are constructed and arranged to accommodate the conductors as well as the switch mechanism without any special fastening for the latter, the parts being of such design that they may be readily molded from any suitable material, such as resinous plastic material, and may be readily assembled and dismantled.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art or as are specifically set forth in the appended claims.

What I claim is:

1. In a lamp, a base having a central vertical socket, a standard having its lower end fitting the socket and having a bulb base socket at its upper end, said standard comprising complementary longitudinal halves which are recessed to receive conductors and switch mechanism, conductors and a switch mechanism in the recesses, said

conductors having contact terminals in the bulb base socket, said bulb base socket being comprised by complemental semi-cylindrical recesses at the upper end of the standard halves with one of the recesses internally threaded and the other plain and one of the terminals being formed as a spring located in the plain recess so as to press a bulb base toward the threaded recess, and means for holding the standard halves together and the standard to the base.

2. In a lamp, a molded base having a central socket, a standard having its lower end fitting the socket and having a socket for a bulb base; said standard including molded complemental longitudinal halves and the halves having recesses for electrical conductors and a switch aggregate; conductors and a switch aggregate held in place by the recesses without the use of fastening devices when the halves are assembled; said bulb base socket being comprised by complemental semi-cylindrical recesses, one of the recesses having molded internal threads while the other is plain, and one of the conductors having a spring terminal in the plain recess and adapted to exert lateral pressure on a bulb base to cause the latter to engage the threads; and means for securing the standard halves together and the base to the standard.

3. In a lamp, a base having a vertical recess; an elongated body having its lower end fitting the recess and having a bulb base socket at its upper end; said body being comprised by longitudinal complemental halves; the halves having com-

plemental cylindrical recesses with longitudinal grooves formed in the bottoms of the recesses and having complemental channels formed in the halves, some of said channels having tortious portions and being enlarged to form chambers; a pair of conductors having tortious portions fitting the channel tortious portions and having normally engaged contact portions in said chambers and one of the conductors having a contact in the socket; a switch aggregate including a bar, whose ends are slidable in said longitudinal grooves to disengage the contacts when at one end of the grooves and to permit engagement thereof when at the other, a lever having a pivot portion fitting the cylindrical recesses, and a spring under initial compression and having its ends attached to the bar and to the lever, the point of attachment of the spring to the lever being eccentric to the pivot axis; said bulb base socket being comprised by complemental semi-cylindrical recesses, one of the recesses being internally threaded and the other being plain and the half having the plain recess having a cored passage; a conductor in the cored passage and having a deformed spring terminal portion in the plain recess and serving to hold the conductor in place in the cored passage and the terminal portion serving to exert lateral pressure on the bulb base to cause the latter to engage the threads; and means for holding the body halves together and the body to the base.

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